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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,800	03/07/2001	Hiroto Yoshioka	55661(904)	9944
21874	7590	03/09/2004	EXAMINER	
EDWARDS & ANGELL, LLP			CHIN, RANDALL E	
P.O. BOX 55874			ART UNIT	
BOSTON, MA 02205			PAPER NUMBER	
			1744	

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

Office Action Summary	Application No.		Applicant(s)	
	09/800,800		YOSHIOKA ET AL.	
	Examiner		Art Unit	
	Randall Chin		1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 and 37-52 is/are pending in the application.
- 4a) Of the above claim(s) 13-35 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-12 and 37-39 is/are allowed.
- 6) ☒ Claim(s) 40 and 42-52 is/are rejected.
- 7) ☒ Claim(s) 41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 01 March 2004 is: a) ☒ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>12152003</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Examiner agrees with Applicant's Remarks in the Amendment filed March 1, 2004 that claim 40 does not constitute new matter. Therefore, the finality of the Office Action mailed to Applicant on January 6, 2004 is hereby withdrawn and action upon all claims follows.

2. Claim 15, line 3, "abject" should read --object--.

Claim 39, line 3, the phrase "it its" should be corrected.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 40, 42-45, 47 and 50 are rejected under 35 U.S.C. 102(e) as being anticipated by Konishi '805.

The patent to Konishi '805 teaches with respect to claims 40, 44, 45, 47 and 50 in Fig. 4 a scrubbing means 31 (roll brush) for scrubbing a first surface of an object W to be cleaned and an ultrasonic wave projection means 42 for supplying an aqueous (see Fig. 6 and disclosure at p. 6, lines 9-27) cleaning agent against a second surface of the object to be cleaned and generating an ultrasonic wave defined by nozzle that "blows"

cleaning agent (col. 7, lines 44-65). The first and second sides are disposed on opposing sides of the object W to be cleaned so that the object to be cleaned is between the scrubbing means and the ultrasonic wave projection means. Additionally, the scrubbing means is deemed to be "in registration" with the first surface of the object to be cleaned and the ultrasonic wave projection means is also deemed to be "in registration" with the second surface of the object to be cleaned. Clearly, substrate W is set between the scrubbing means 31 and the ultrasonic wave projection means 42 as shown in Fig. 4.

As for claim 42, aqueous cleaning agent is supplied onto the first surface of the object W to be cleaned by nozzle 41 in Fig. 4.

As for claim 43, there is transport means for transporting the object to be cleaned (col. 6, lines 56-57).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 46, 48, 49, 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konishi '805.

As for claim 46, the use of a roll brush or disk brush in wafer/substrate cleaning is old and well known and one skilled in the art would find it obvious to use either type depending on desired structural configurations.

It is the Examiner's position that spraying the cleaning agent in a radial fashion as recited in claim 48 is within the level of ordinary skill since such an arrangement could also accomplish Konishi's goal of cleaning the entire surface area of the wafer W. Either spraying arrangement (i.e., radial or perpendicularly) is deemed old and well known.

As for claim 49, Konishi's ultrasonic wave is megasonic in frequency at a frequency of 1.8 MHz (col. 7, lines 50-52), however, one skilled in the art would find it obvious to apply a frequency band in the claimed range of 850 kHz to 1 MHz since these values are well within a megasonic range and simply by optimizing the frequency band for efficient cleaning.

As for claims 51 and 52, the use of transport rollers or a belt conveyor is a design choice which can depend on design features or economic reasons. The use of transport arms, rollers or belts are all old and well known in the art.

Allowable Subject Matter

7. Claims 1-12 and 37-39 are allowed.

Claim 41 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communication from the Examiner should be directed to Randall Chin whose telephone number is (571) 272-1270. The Examiner can normally be reached on Monday through Thursday and every other Friday.


If attempts to reach the Examiner are unsuccessful, the Examiner's supervisor, Robert Warden, can be reached at (571) 272-1281. The number for Technology Center 1700 is (571) 272-1700.

The central fax number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



R. Chin



Randall Chin
Primary Examiner
Art Unit 1744